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Design Team

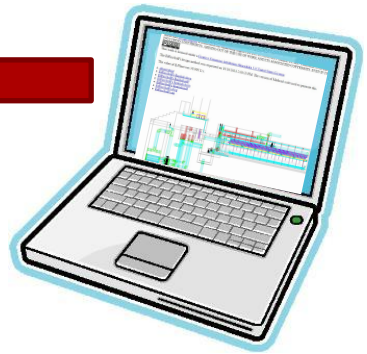
Spring 2016

Cornell University

The Design Team

Research Teams

The Design Team



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CDC System

Meghan

Cornell University

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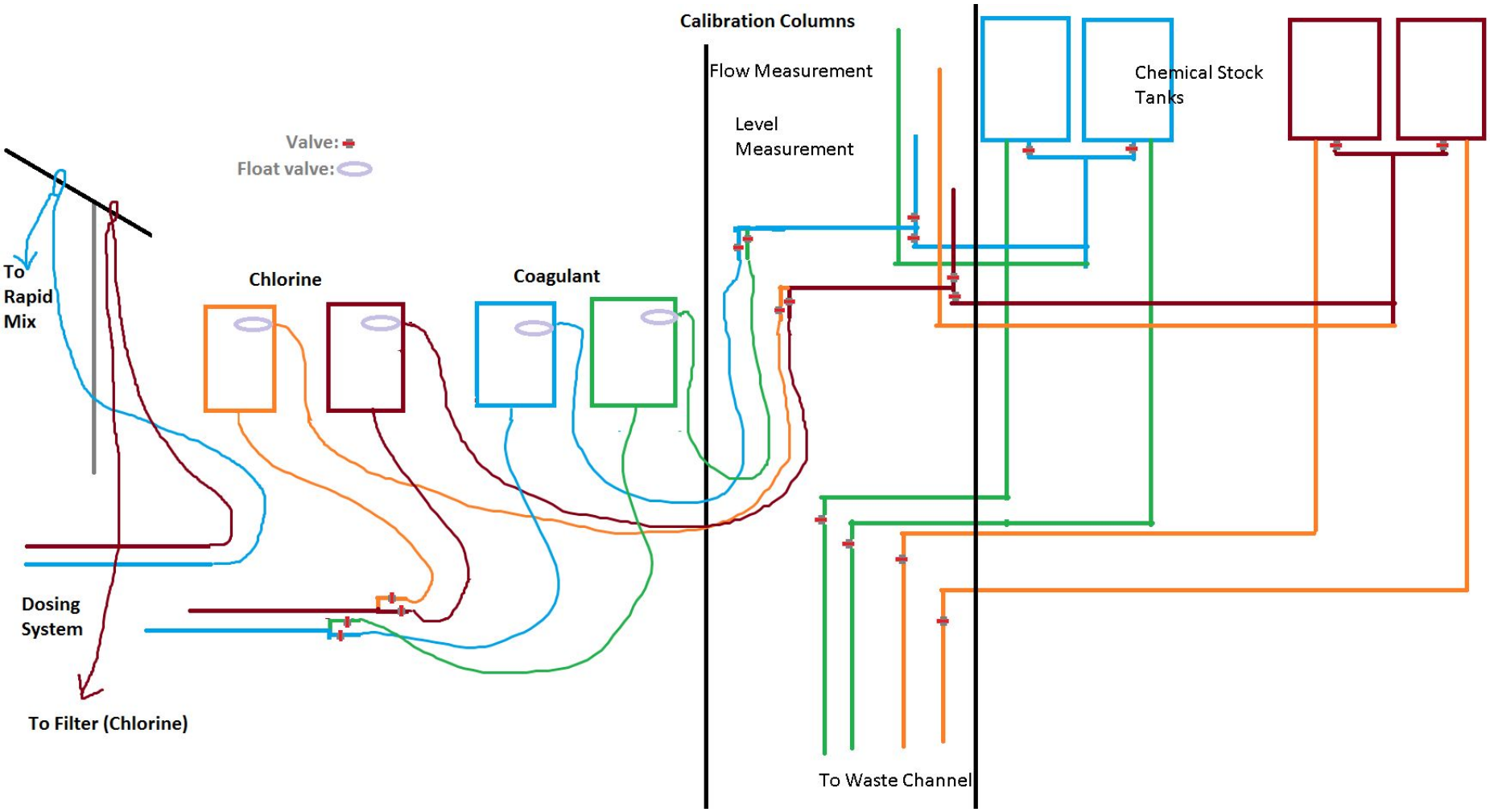
Goal



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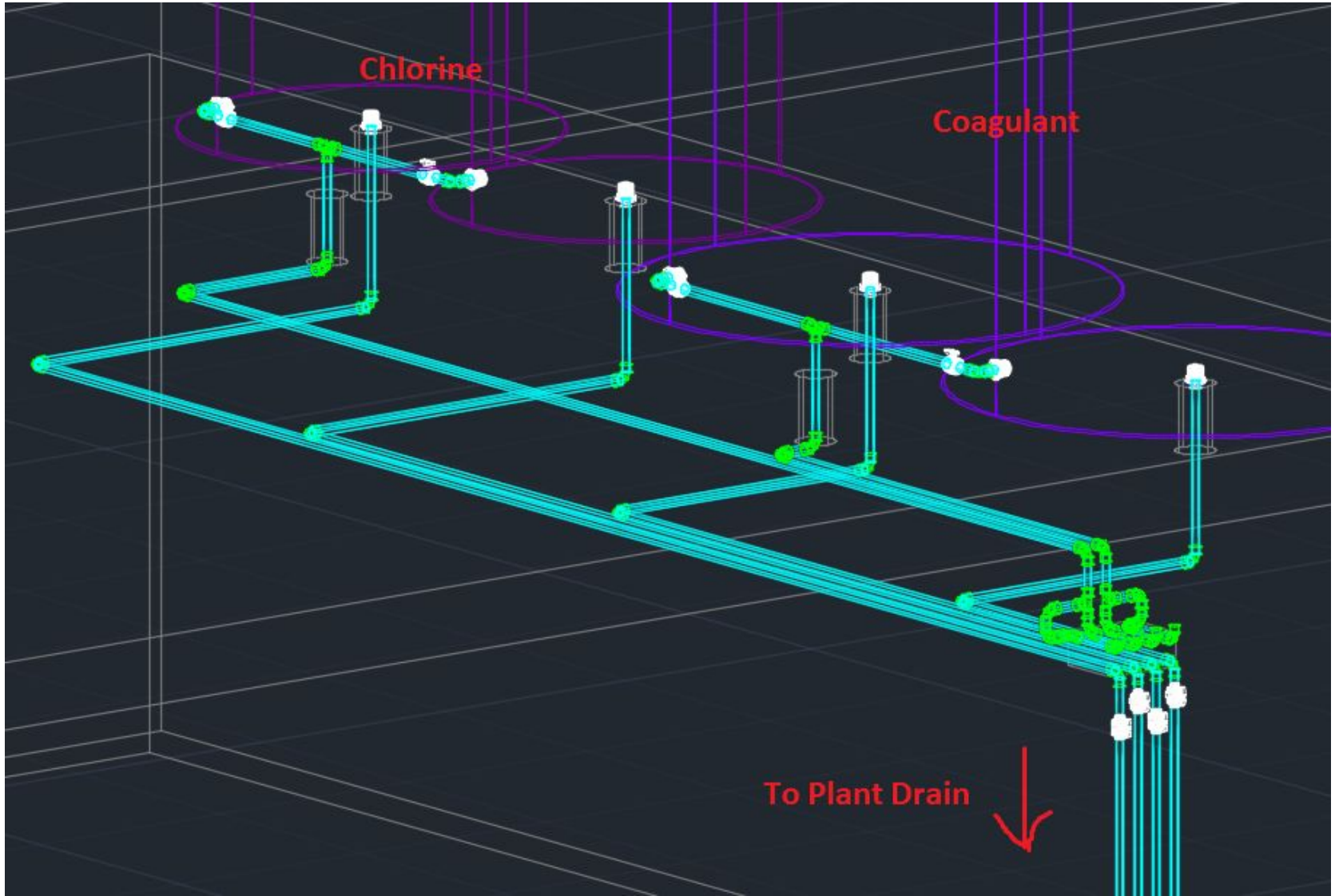
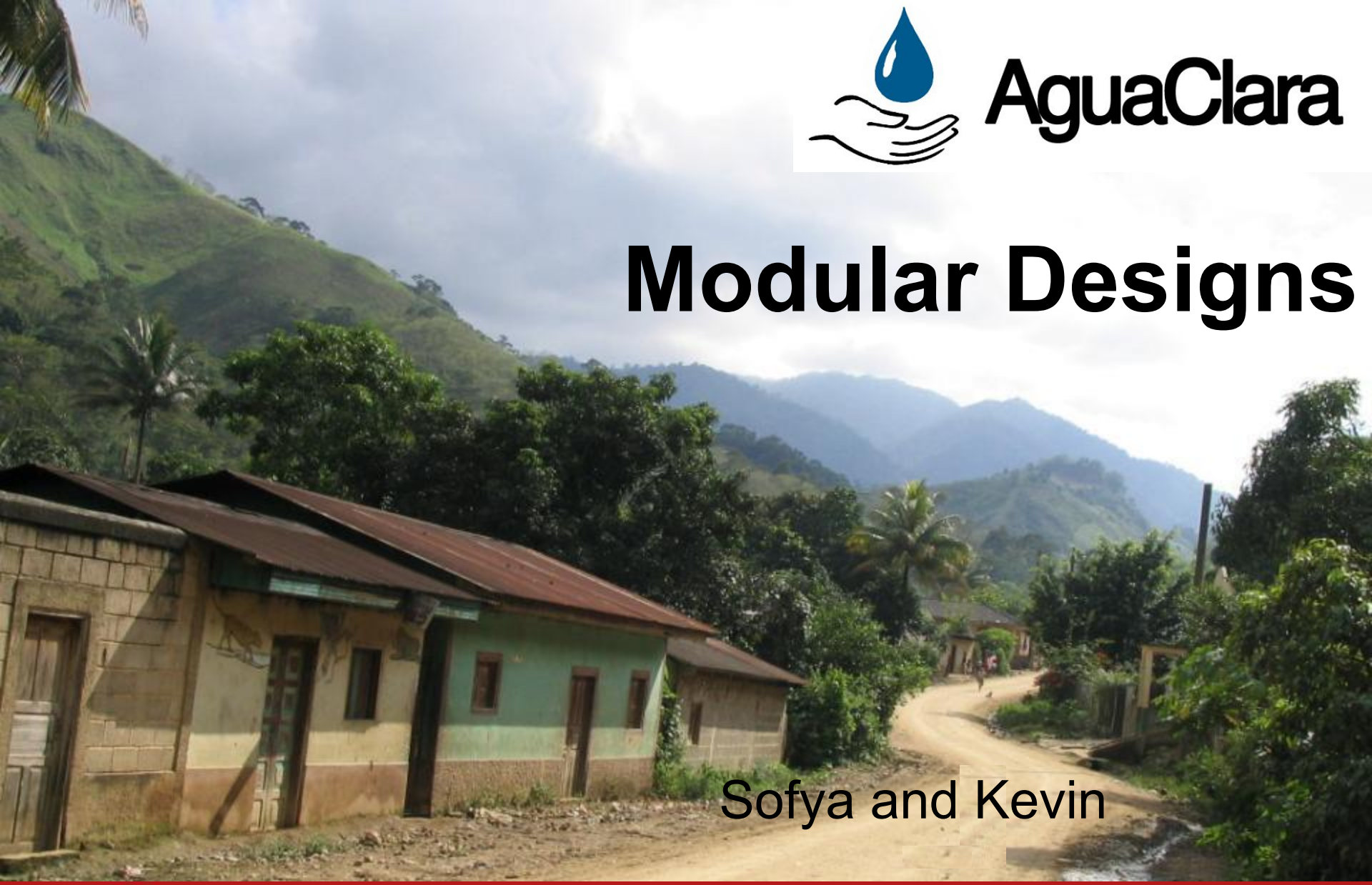
Progress





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Modular Designs

Sofya and Kevin

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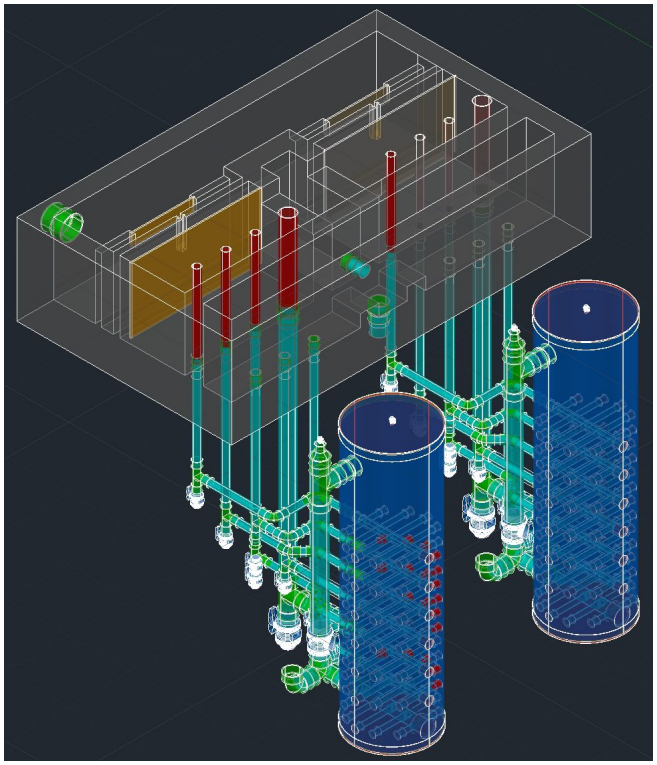
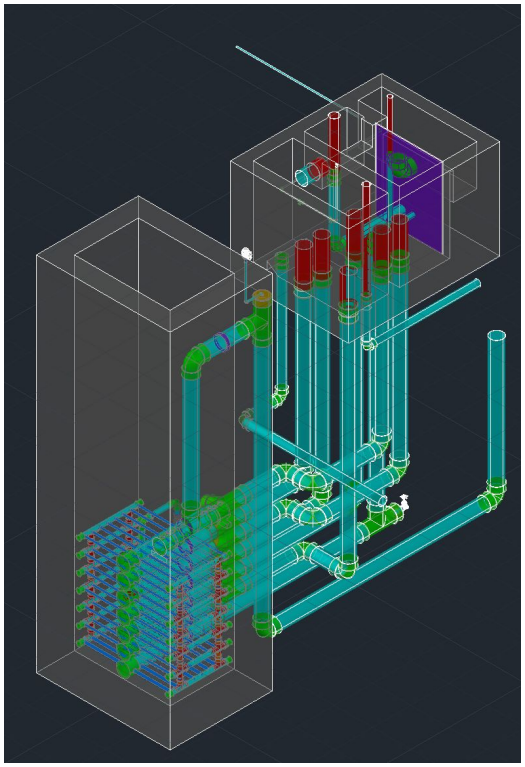
OStaRS/EStaRS





$$AC_{Filter} := \begin{cases} AC_{FilterLow} & \text{if } Q_{Plant} \le 8\,\frac{L}{s} \\ AC_{FilterHigh} & \text{otherwise} \end{cases}$$

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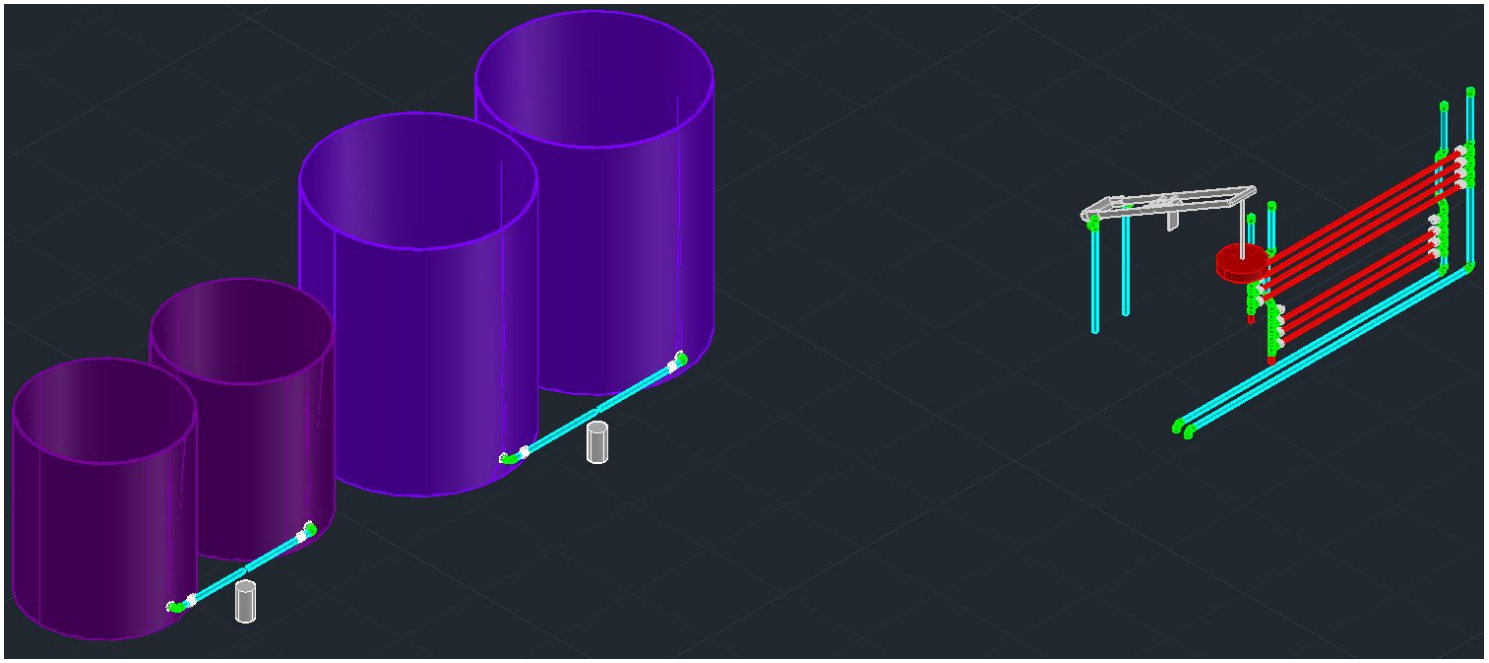
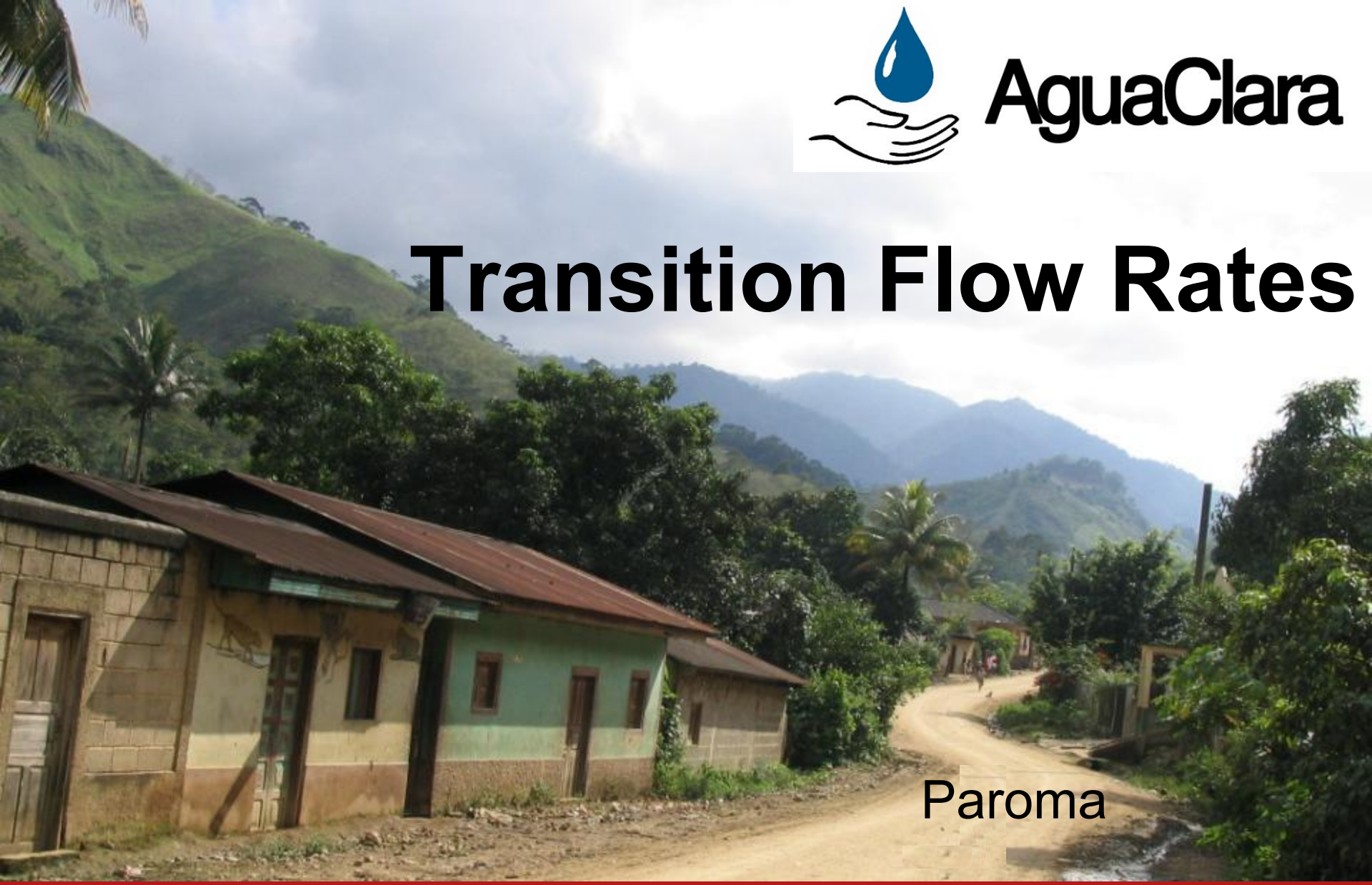
CDC and Storage Tanks





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Goals

- determine transition flow rates
  - currently have some ideas, but they could use some research
- publish document explaining the constraints that determine the transition zones

Description	Constraint that governs upper transition	Min Q L/s	Max Q L/s
pipe floc, circular PVC pipe sed tank, EStaRS	economics		?
2 or more EStaRS 1 rectangular sed tank	maximum flow in one sed tank		5.x
2 or more EStaRS 2 or more sed tanks	switch to multiple sed tanks	5.x	16
2 or more OStaRS	perhaps size of sed tank inlet channel or LFOM or vertical flow limit on flocculator???	16	100?
Multiple treatment trains (multiple chemical dosing, entrance tanks, flocculators)		100?	1000

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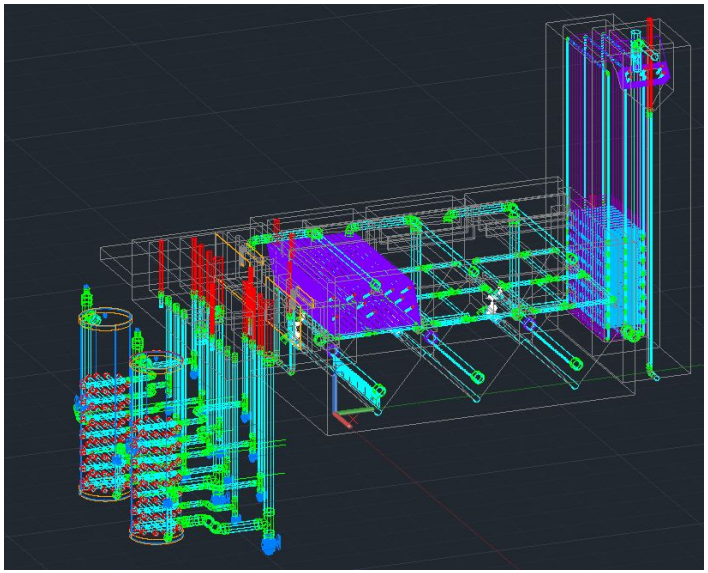
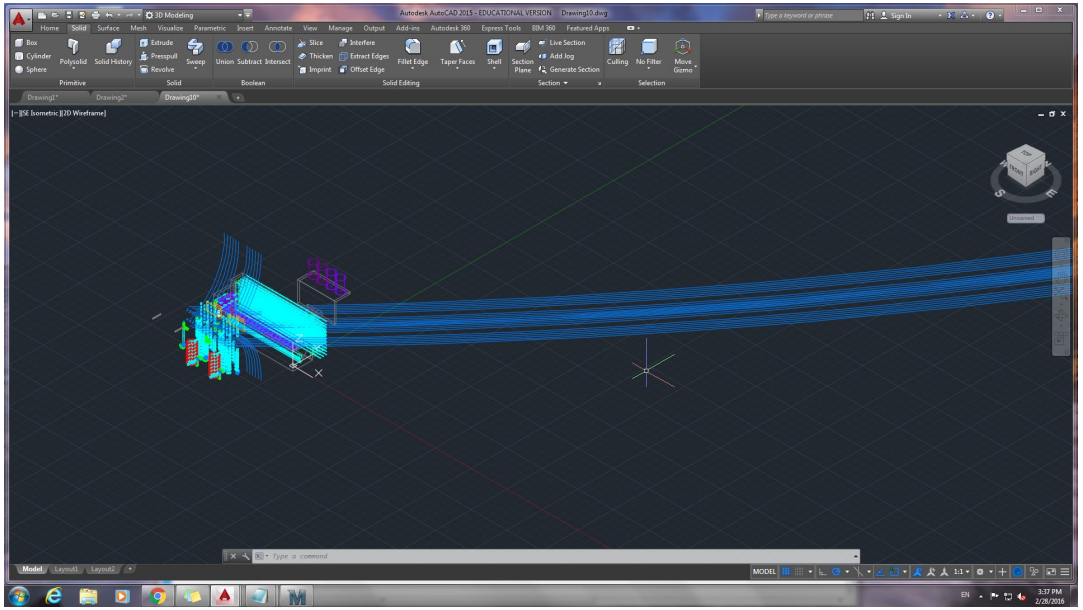
Current Work



- low flow transition
  - what happens if we have several small sed tanks?
    - let's draw it and see!
  - challenges: the low flow code
    - making variables consistent
    - working with component origins
  - plan: send these to Honduras engineers and Monroe
    - what looks wrong?



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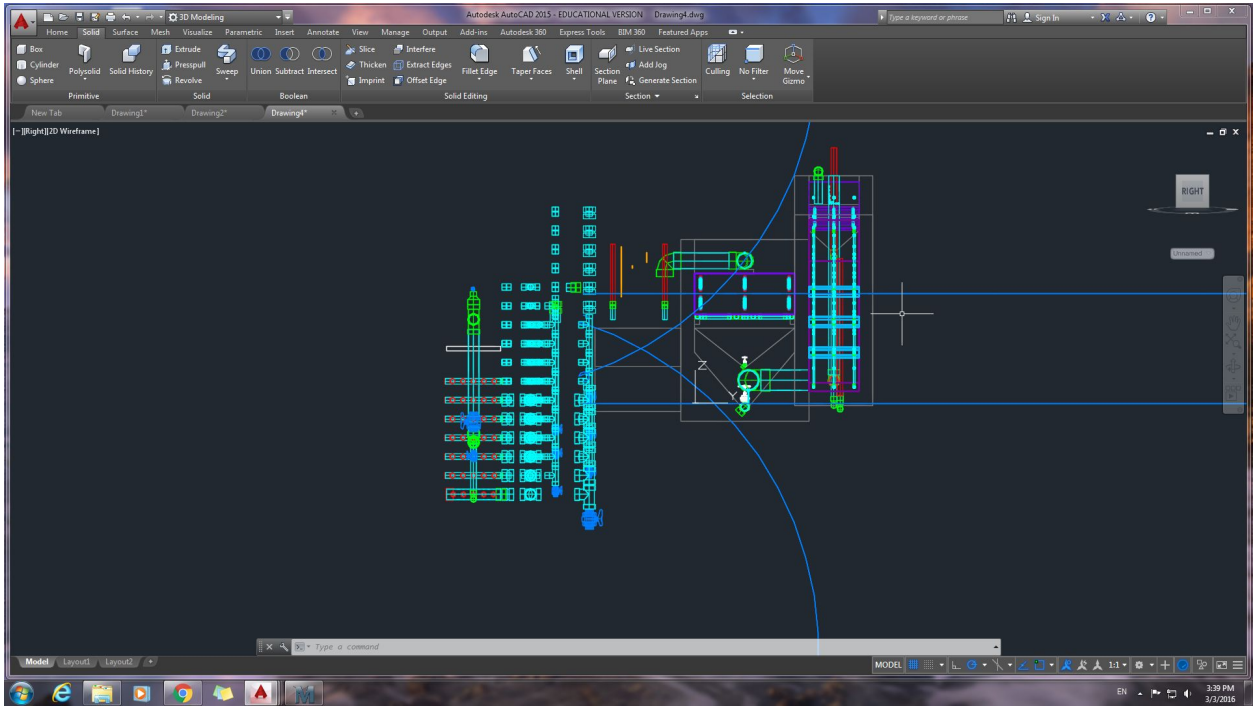
Future Work

- work with the engineers to determine what looks right in the low flow plant
- push the LFOM code to see its limits for high flow code
- write the document!



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StaRS Mold Shop Drawings

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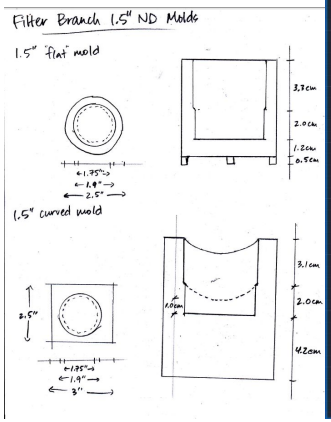
StaRS Mold
Shop Drawings: Goal

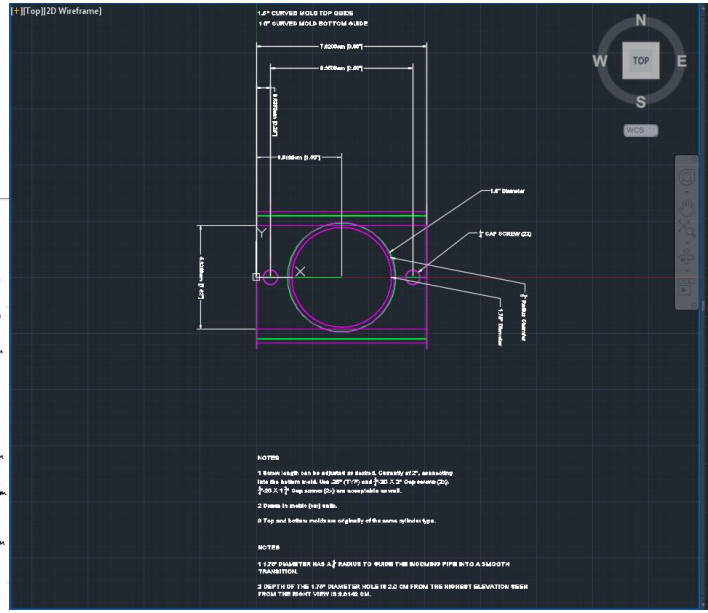
Fig 1. 1.5” Curved Mold

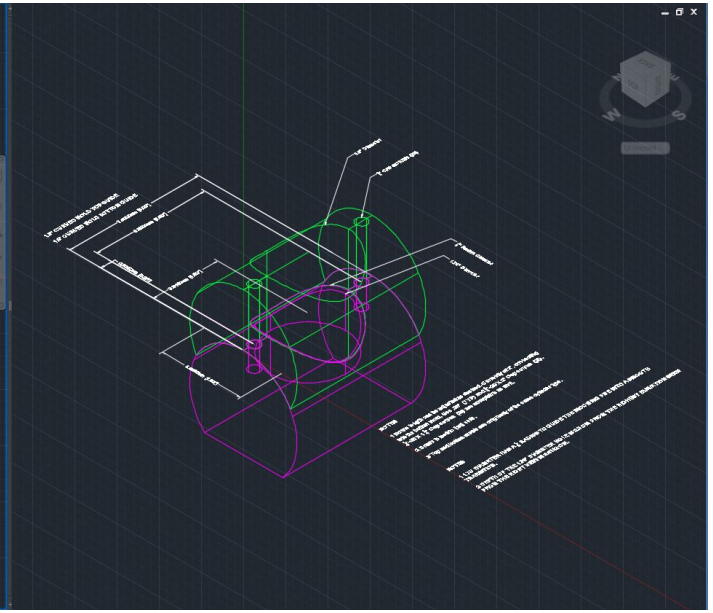
Fig 2. 1” Flat Mold

Fig 3. Pipes

StaRS Mold Shop Drawings: Progress







- Dimensions from APP
- Shop Drawing with notes
  - Cap Screw
  - ⅛” Radius Chamfer
  - Center-oriented hole

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